

REMARKS

Applicants have carefully reviewed and considered the Examiner's Action mailed July 12, 2007. Reconsideration is respectfully requested in view of the foregoing amendments and the comments set forth below.

By this Amendment, independent claim 2 is amended. Accordingly, claims 1-3 are pending in the present application.

At the top of page 2 of the Action, the Examiner indicated that the conjunction “and” between the “supplying” and “converging” paragraphs of method claim 2 had two meanings and that the claim would be interpreted as inclusive of any of the possibilities. In order to clarify the “supplying” and “converging” paragraphs, claim 2 has been amended to recite that the “supplying” paragraph occurs simultaneously with the “converging” paragraph. That is, as stated on page 11, lines 22-27 of the originally filed application, the plasma control occurs at the same time as the supplying electrical power.

Applicants note that the Examiner objected to the scanned claim 1 because “a dust particle or period [appeared] in the scanned document” after “(9)” in line 10. The copy of the filed specification in Applicants’ file did not include “a dust particle or period”. Thus, claim 1 is reprinted as an Original claim because the scanning of the document created the “dust particle or period” noted by the Examiner and the same was not included in the originally-filed application.

Claims 1 and 2 were rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 5,009,922 to Harano et al. (hereinafter referred to as “Harano”) and further in view of JP 3163868 (hereinafter referred to as “JP‘868”) and JP 4350157 (hereinafter referred to as “JP‘157”). This rejection is respectfully traversed.

Harano is directed to a method of forming a transparent conductive film using an arc discharge type plasma generated in an atmosphere wherein the pressure of an atmospheric gas is 3.0×10^{-4} or higher, and the plasma is converged onto a vapor deposition material whereby the transparent conductive film is formed on a substrate located above the vapor deposition material. See column 2, lines 37-48 of Harano.

While the Examiner states that Harano fails to teach the recited features of repeatedly supplying stepwise increased electric power and “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region”, the secondary references to JP‘868 and JP‘157 do not teach or suggest the claimed feature of “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region”.

In particular, JP‘157, which the Examiner alleges as teaching a way to control the size of the plasma focus area in Figure 2 of JP‘157, the disclosure of this reference describes as follows under “Effects of the Invention”:

As clearly described in the above description of this invention, by forming its permanent magnet under a volatile material crucible as a plurality of permanent magnets arranged to be movable in a horizontal direction and by regulating the distances between the permanent magnets, a desired density of plasma distribution is formed in the volatile material crucible. Namely, a most suitable density of plasma distribution focusing on the volatile material crucible can be performed, thereby not only a uniform thickness of a thin film vapor can be formed, but also a most suitable vapor deposit area can be secured in accordance with the size of the surface of the substrate, which effects that a good efficiency on forming the vapor depositing is attained.

More specifically, JP‘157 proposes “a plurality of permanent magnets arranged to be movable in a horizontal direction and by regulating the distances between the permanent magnets” so that this arrangement provides “a desired density of plasma

distribution [is] formed in the volatile material crucible. Namely, a most suitable density of plasma distribution focusing on the volatile material crucible”, which leads to “a uniform thickness of a thin film vapor [being] formed” and “a most suitable vapor deposit area can be secured in accordance with the size of the surface of the substrate.”

Nowhere in the English-language Abstract does JP‘157 teach or suggest the claimed feature of “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region”. It is respectfully submitted that the above translated of a portion of JP‘157 (provided by Applicant) indicates that the most JP‘157 teaches to one of ordinary skill in the art is the horizontal movement of magnets to create a uniform thickness of the deposit area and a deposit area in accordance with the size of the substrate. Claim 2 specifically recites “converging the plasma into a first plasma region necessary for evaporating the material and the continuously and sequentially moving and expanding the plasma from the first plasma region up to a maximum plasma region in lines 10 to 12, while claim 1 recites a similar feature in lines 13 to 16. JP‘157 is silent about the latter recited feature.

Consequently JP‘157 cannot suggest a the claimed combination of “repeatedly supplying gradually (stepwise) increased electric power” and “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region”, even if one of ordinary skill in the art exercising commonsense combined the teachings of JP‘868 with the primary reference to Harano. Accordingly, none of the prior art references cited in the Office Action, either taken individually or collectively, teach or suggest the claimed subject matter set forth in independent claims 1 and 2 of the present

application. Withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

Claim 3 was rejected under 35 U.S.C. §103(a) as being unpatentable over Harano, JP'868 and JP'157 and further in view of JP 2001001202 (hereinafter referred to as JP'202). This rejection is respectfully traversed.

Claim 3 is directed to a coating tool including a cutting tool base material and a film formed according to the process set forth in claim 2. That is, claim 3 is dependent upon claim 2 and requires all the recited features of that claim. Since none of the applied references, as argued above, disclose the claimed combination of repeatedly supplying stepwise increased electric power and “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region” in order to form the claimed multicomponent film, it is submitted that one of ordinary skill in the art would not have expected the claimed invention to be achieved by combining the above argued combination with a reference disclosing a film of nitride, carbonitride, nitroboride, carbonnitride or the like of Ti and Al to improve cutting. There is no disclosure of the recited features: repeatedly supplying stepwise increased electric power and “sequentially moving and expanding the plasma from a first plasma region up to a maximum plasma region” in JP'202. Accordingly, JP'202 cannot cure the missing features recited from the claims of the present application. Withdrawal of this rejection is requested.

Claims 1 and 2 were rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of U.S. Patent Application No. 10/561,248. Claim 3 was provisionally rejected under 35 U.S.C. §101 as claiming the same invention of claim 8 of copending U.S. Application No. 10/561,248. The


undersigned is the attorney of record in U.S. Application No. 10/561,248. Concurrently filed with this Amendment, is a paper expressly abandoning U.S. Application No. 10/561,248. A courtesy copy of the filing is attached for the Examiner's convenience. Consequently, U.S. Application No. 10/561,248 is no longer a pending U.S. Application and thus, claims 1-3 cannot be rejected based on this abandoned application. Withdrawal of the double patenting rejection and the rejection under 35 U.S.C. §101 is respectfully requested.

In view of the foregoing, it is respectfully submitted that claims 23-40 are allowable over the prior art of record. Reconsideration of the application and an issuance of a Notice of Allowance are earnestly solicited.

If the Examiner is of the opinion that the prosecution of the application would be advanced by a personal interview, the Examiner is invited to telephone undersigned counsel to arrange for such an interview.

Respectfully submitted,

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